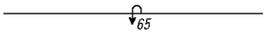
GEOLOGIC MAP SYMBOLS OF THE U.S. GEOLOGICAL SURVEY

Recommended geologic map symbols for publications of the U.S. Geological Survey are given in the following list, which is arranged in order of the usual appearance of the map symbol in an explanation: this order may be altered for emphasis. This list is not comprehensive and variations in the recommended symbols may be made to meet particular geologic situations

CONTACTS

Boundaries between geologic formations or other rock units. Symbols should be conbined to fit available space where practical. Preferred phrasing when several types of contacts are mapped and combined in the explanation: *Long-dashed where approximately located; short-dashed where inferred; dotted where concealed; queried where doubtful.* Contact line symbols signify accuracy of location or character of exposure; only solid-line contacts are used for maps at scales smaller than 1:125,000 (1:250,000; 1:500,000; 1:1,000,000). Generally solid line implies accuracy of placement within 1/50 in. at scale of map. If symbols give engineering accuracy of location of contact, standard used in mapping should be given in italics. Coal and other economically important beds may also be used for contacts. Make all contact line weights .006 in.

Contact		A line weight of .004" may be used if geology is congested
Contact, showing dip		If known, show top side of vertical contact by single arrow and 90
Overturned contact, showing dip		
Approximate contact		Not surely located within 1/50 in. at scale of map
Indefinite contact		Insufficient data to establish contact with certainty
Inferred contact		No data to establish contact but contact must be present
Gradational contact		Continuous change from one lithology or rock type to another. Contact arbitrary
Concealed contact		Must be beneath mapped geologic unit, water, or ice
Contact, located by ground magnetic survey		Contacts determined by instrumentation or by other than conventional surface geologic methods may require special symbols for differentiation
Contact, located by airborne magnetic survey		